

**FINAL REPORT
JANUARY 2002**

REPORT NO. 02-04



**BOX, WOODEN FOR 105MM HOWITZER
AMMUNITION IN A FIBER CONTAINER, M105A3,
UNITED NATIONS (UN) PERFORMANCE ORIENTED
PACKAGING (POP) TEST**

Distribution Unlimited

Prepared For:

McAlester Army Ammunition Plant
McAlester, OK 74501



**VALIDATION ENGINEERING DIVISION
MCALESTER, OKLAHOMA 74501-9053**

20020221 080

AVAILABILITY NOTICE

A copy of this report will be furnished each attendee on automatic distribution. Additional copies or authority for reprinting may be obtained by written request from:

Director
U.S. Army Defense Ammunition Center
ATTN: SOSAC-DEV
1 C Tree Road, Bldg. 35
McAlester, OK 74501-9053

Reports may also be downloaded or viewed in PDF format from our web site at:

<http://www.dac.army.mil/DEV/TestReports>

DISTRIBUTION INSTRUCTIONS

Destroy this report when no longer needed. Do not return.

Citation of trade names in this report does not constitute an official endorsement.

The information contained herein will not be used for advertising purposes.

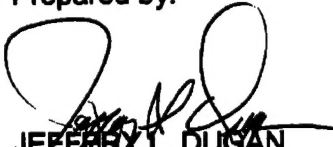
**TEST REPORT NO. 02-04
BOX, WOODEN FOR 105MM HOWITZER
AMMUNITION IN A FIBER CONTAINER, M105A3,
UNITED NATIONS (UN) PERFORMANCE ORIENTED
PACKAGING (POP) TEST**

JANUARY 2002

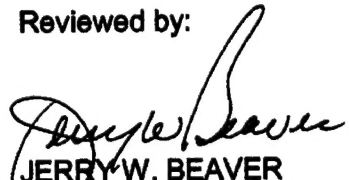
ABSTRACT

The U.S. Army Defense Ammunition Center (DAC), Validation Engineering Division (SOSAC-DEV), was tasked by the McAlester Army Ammunition Plant (MCAAP) to conduct a UN POP Test for box, wooden for 105mm Howitzer ammunition in a fiber container, M105A3. Six test sample boxes were used in the tests. No significant flaws were found. As a result of the performance of the containers during testing, the box, wooden for 105mm Howitzer ammunition in a fiber container, M105A3 is recommended for USA-wide use.

Prepared by:


JEFFERY L. DUGAN
Validation Engineer

Reviewed by:


JERRY W. BEAVER
Chief, Validation Engineering Division

U.S. ARMY DEFENSE AMMUNITION CENTER

**VALIDATION ENGINEERING DIVISION
MCALESTER, OK 74501-9053**

REPORT NO. 02-04

**BOX, WOODEN FOR 105MM HOWITZER
AMMUNITION IN A FIBER CONTAINER, M105A3,
UNITED NATIONS (UN) PERFORMANCE ORIENTED
PACKAGING (POP) TEST**

TABLE OF CONTENTS

PART	PAGE NO.
1. INTRODUCTION	1-1
A. BACKGROUND	1-1
B. AUTHORITY	1-1
C. OBJECTIVE.....	1-1
D. CONCLUSION.....	1-1
2. ATTENDEES	2-1
3. TEST PROCEDURES	3-1
4. TEST RESULTS	4-1
5. SPECIAL PACKAGING INSTRUCTIONS.....	5-1
6. DRAWINGS	6-1

PART 1 – INTRODUCTION

A. BACKGROUND. The U.S. Army Defense Ammunition Center (DAC), Validation Engineering Division (SOSAC-DEV), was tasked by the McAlester Army Ammunition (MCAAP) to conduct a UN POP Test for certification of the box, wooden for 105mm Howitzer ammunition in a fiber container, M105A3.

B. AUTHORITY. This test was conducted IAW mission responsibilities delegated by the U.S. Army Operations Support Command (OSC), Rock Island, IL. Effective 9 July 1993, the three-letter designator “DEV” was assigned for use when conducting UN POP tests. Effective 9 August 1994 this designation was included in the Joint Regulation AR 700-143, Performance Oriented Packaging of Hazardous Materials. Reference is made to the following:

IOC-R, 10-23, Mission and Major Functions of USADAC,
7 January 1998.

C. OBJECTIVE. To determine if this item meets UN POP requirements.

D. CONCLUSION. As tested, the box, wooden for 105mm Howitzer ammunition in a fiber container, M105A3 meets all UN POP requirements with no problems encountered during testing.

PART 2 – ATTENDEES

DATE PERFORMED: 30 October – 2 November 2001

ATTENDEE

Jeffery L. Dugan
General Engineer
DSN 956-8090
(918) 420-8090

Daryl K. Sieczkowski
Electronics Technician
DSN 956-8988
(918) 420-8988

MAILING ADDRESS

Director
U.S. Army Defense Ammunition Center
ATTN: SOSAC-DEV
1 C Tree Road, Bldg. 35
McAlester, OK 74501-9053

Director
U.S. Army Defense Ammunition Center
ATTN: SOSAC-DEV
1 C Tree Road, Bldg. 35
McAlester, OK 74501-9053

PART 3 -TEST PROCEDURES

The test procedures outlined herein were extracted and summarized from 49 CFR, Subpart M, Section 178.600. All tests were conducted to Packing Group II requirements.

A. DROP TEST. Each package will be dropped onto a non-yielding surface from the height and orientations listed below. The drop height is measured as the vertical distance from the target to the lowest point on the package. The drop height for Packing Group I is 1.8 meters (5.9 feet), for Packing Group II it is 1.2 meters (3.9 feet), and Packing Group III is 0.8 meters (2.6 feet) for materials which have a specific gravity (SG) exceeding 1.2, the drop height must be calculated as follows: for Packaging Group I the SG X 4.9 feet; for Packaging Group II the SG X 3.3 feet; and, for Packaging Group III the SG X 2.2 feet.

Packaging	No. of Tests	Drop Orientation of Samples
Steel drums, Aluminum drums, Metal Drums (other than steel or aluminum), Steel jerricans, Plywood drums, Wooden barrels, Fiber drums, Plastic drums and jerricans, Composite packagings which are in the shape of a drum	Six ... (three for each drop)	First drop (using three samples): The package must strike the target diagonally on the chime or, if the packaging has no chime, on the circumferential seam or an edge. Second drop (using the other three samples): The package must strike the target on the weakest part not tested by the first drop, for example a closure or, for some cylindrical drums, the welded longitudinal seam of the drum body.
Boxes of natural wood, Plywood boxes, Reconstituted wood boxes, Fiberboard boxes, Plastic boxes, Steel or aluminum boxes, Composite packagings which are in the shape of a box.	Five... (one for each drop)	First drop: Flat on the bottom (using the first sample). Second drop: Flat on the top (using the second sample). Third drop: Flat on the long side (using the third sample). Fourth drop: Flat on the short side (using the fourth sample). Fifth drop: On a corner (using the fifth sample).
Bags — single-ply with a side seam	Three... (three drops per bag).	First drop: Flat on a wide face (using all three samples). Second drop: Flat on a narrow face (using all three samples). Third drop: On an end of the bag (using all three samples).
Bags — single-ply without a side seam, or multi-ply	Three... (three drops per bag).	First drop: Flat on a wide face (using all three samples). Second drop: On an end of the bag (using all three samples).

B. LEAKPROOFNESS TEST. Three samples of each different packaging must be tested and pass the leakproofness test. The packaging must be restrained under water while the internal air pressure is applied. An internal air pressure must be applied to the packaging as indicated for the following groups;

- (1) Packaging Group I: Not less than 30 kPa (4 psi)
- (2) Packaging Group II: Not less than 20 kPa (3 psi)
- (3) Packaging Group III: Not less than 20 kPa (3 psi)

The test must be conducted for a minimum time of 5 minutes.

C. HYDROSTATIC PRESSURE TEST. Three test samples are required for each different packaging. For packagings constructed of stainless steel, monel, or nickel, only one sample is required for periodic retesting of packagings. Metal packagings and composite packagings other than plastic, including their closures, must be subjected to the test for 5 minutes. Plastic packagings and composite packagings, including their closures, must be subjected to the test pressure for 30 minutes. The test pressure must be applied continuously and evenly, and it must be kept constant throughout the test period. The hydraulic pressure applied, taken at the top of the receptacle, and determined by any one of the following methods must be:

- (1) Not less than the total gauge pressure measured in the packaging at 55 degrees C (131 degrees F), multiplied by a safety factor of 1.5. This total gauge pressure must be determined on the basis of a maximum degree of filling with a filling temperature of 15 degree C (59 degree F);
- (2) Not less than 1.75 times the vapor pressure at 55 degrees C (122 degrees F) of the material to be transported minus 100 kPa (15 psi), but with a minimum test pressure of 100 kPa (15 psi); or
- (3) Not less than 1.5 times the vapor pressure at 55 degrees C (131 degrees F) of the material to be transported minus 100 kPa (15 psi), but with a minimum test pressure of 100 kPa (15 psi).

Packagings intended to contain hazardous materials of Packing Group I must be tested to a minimum test pressure of 250 kPa (36 psi).

D. STACKING TEST. Three test samples must be subjected to a force applied to the top surface of the test sample equivalent to the total weight of identical packages that might be stacked on it during transport. The minimum height of the stack, including the test sample, must be 3.0 meters (10 feet). The duration of the test must be 24 hours, except that plastic drums, jerricans, and composite packaging 6HH, intended for liquids, shall be subjected to the stacking test for a period of 28 days at a temperature of not less than 40 degrees Celsius (104 degrees Fahrenheit). Alternative test methods that yield equivalent results may be used if approved by the Associate Administrator for Hazardous Materials Safety.

E. VIBRATION TEST. Three sample packagings, selected at random, must be filled and closed as for shipment. The three samples must be placed on a vibrating platform that has a vertical or rotary double-amplitude (peak-to-peak displacement) of one inch. The packages should be constrained horizontally to prevent them from falling off the platform, but must be left free to move vertically, bounce and rotate. The test must be performed for one hour at a frequency that causes the package to be raised from the vibrating platform to such a degree that a piece of material approximately 1.6mm (0.063 inch) thickness (such as steel strapping or paperboard) can be passed between the bottom of any package and the platform.

F. PASS/FAIL CRITERIA. A package passes the above tests if there is no rupture or leakage from any of the samples. No test sample should show any deformation that could adversely affect transportation safety or any distortion liable to reduce packaging strength.

PART 4 – TEST RESULTS

UN POP tests for certification of the box, wooden for 105mm Howitzer ammunition in a fiber container, M105A3 were conducted on the boxes with part number 7549072. Applicable tests conducted were as follows:

A. DROP TEST. Drop tests were conducted on 31 October 2001 from 3.9 feet on test samples 2, 3, and 4. The impact surface was a steel sheet covering a concrete surface that provided an unyielding surface. The drops conducted were oriented flat-bottom, flat-top, flat-long side, flat-short side, and corner. Post drop inspections showed no significant damage. Photo 1 shows the setup used for the drop tests.

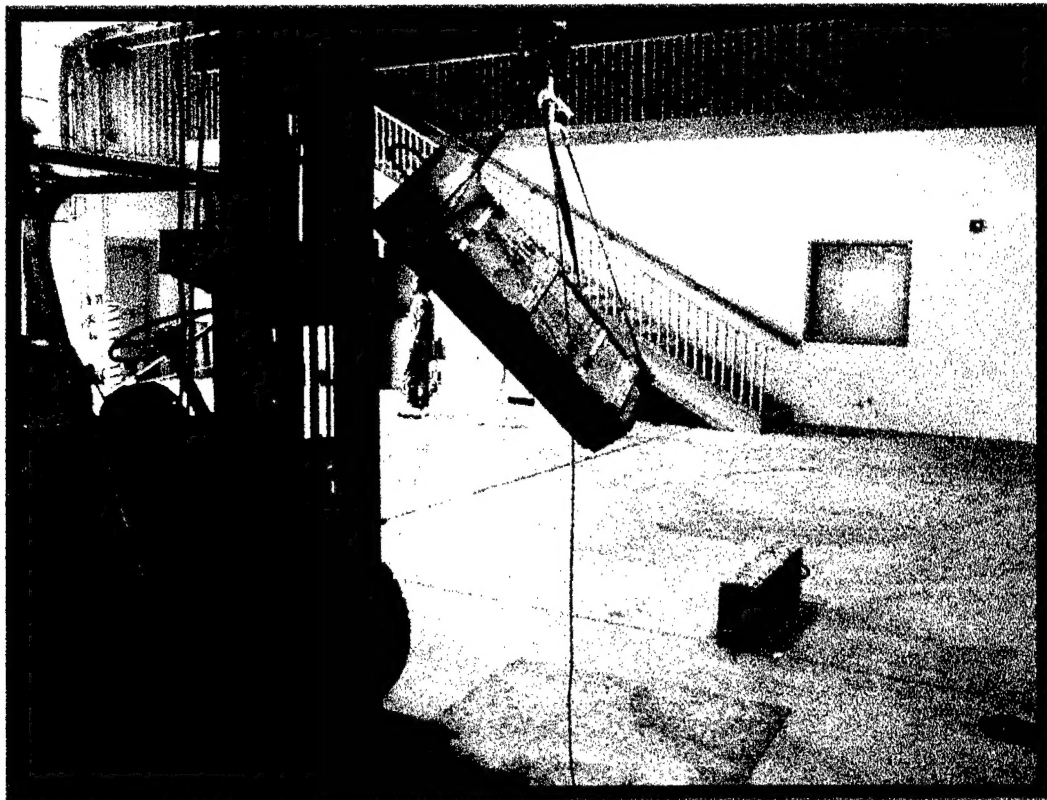


Photo 1. Drop Test Setup for UN POP Testing

B. COMPRESSION TEST. The compression test was conducted on 31 October to 1 November on test sample 1 and from 1 November to 2 November on test samples 5 and 6. The test compression was for 24 hours. The compression weight was 2,200 pounds. This weight equates to a minimum stack height of 10 feet as required by UN POP test procedures. End of test inspection indicated no damage. See Photo 2 for test setup for compression tests.

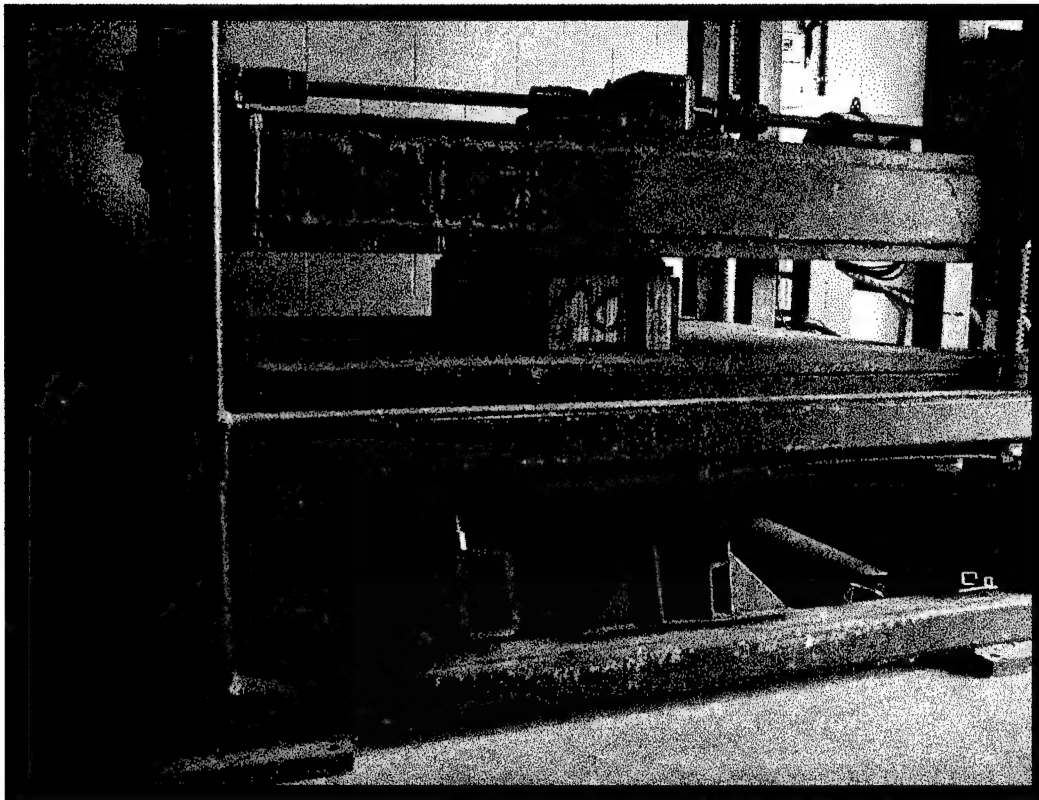


Photo 2. Compression Test Setup for UN POP Testing

C. VIBRATION TEST - The vibration tests were conducted on 31 October 2001 on test samples 2, 3, and 4. The test ran for 1 hour for each test sample in the lateral and longitudinal directions. The test samples were vibrated at 234

rpm in the lateral direction and 266 rpm in the longitudinal direction. Post vibration test inspections showed no significant damage. Photo 3 shows the setup for the vibration tests.

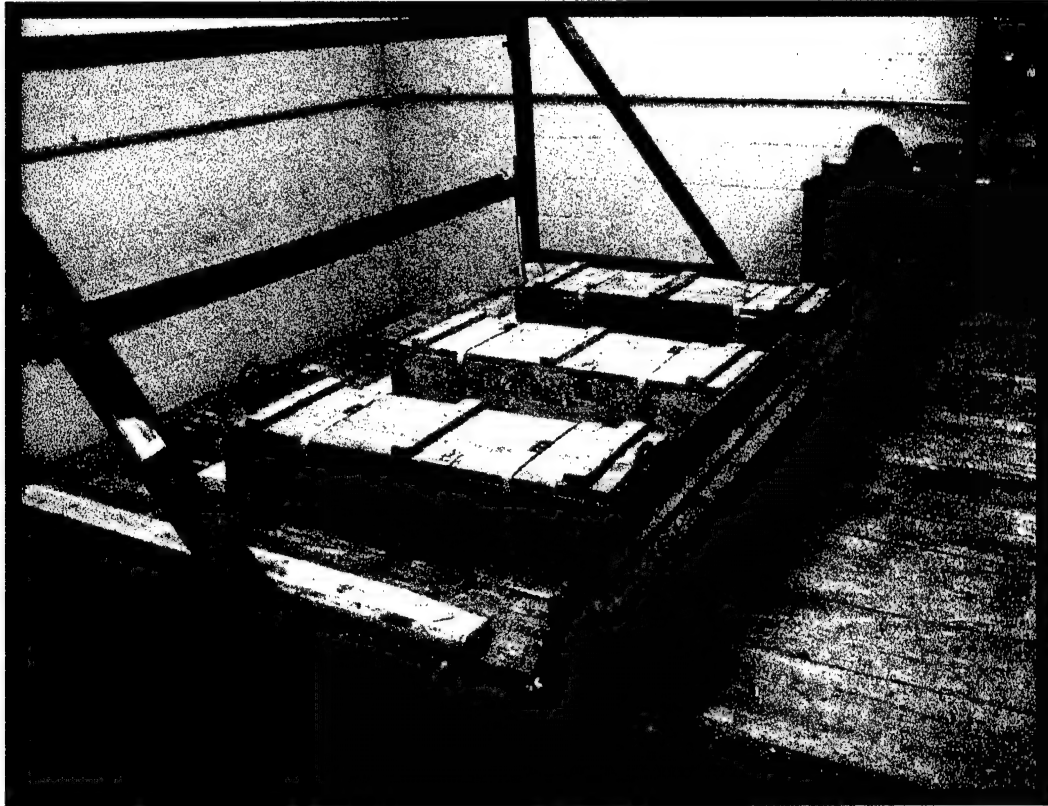


Photo 3. Vibration Test Setup for UN POP Testing

UN POP TESTS (STANDARD FORM)

**BOX, WOODEN FOR 105MM HOWITZER
AMMUNITION IN A FIBER CONTAINER, M105A3,
UNITED NATIONS (UN) PERFORMANCE ORIENTED
PACKAGING (POP) TEST**

U.S. Army Defense Ammunition Center
ATTN: SOSAC-DEV, 1 C Tree Road
McAlester, OK 74501-9053

918-420-8908

Jerry W. Beaver

Test Report Number: 02-04

Service Code: DEV

Product NSN: **

Nomenclature: Cartridge, 105mm

HE M1 W/O Fuze

Shipping Name: Cartridges for Weapons

UN ID Number: **

Hazard Class: **

Packaging Group: II

Physical State: Solid

NALC/DODAC: **

CAA Number: N/A

EX Number: **

CFR 49 Packaging Method: 130

Net Explosive Weight: **

** For this information see the Joint Hazard Classification System for the item to be shipped.

DESCRIPTION OF PACKAGINGS TO BE TESTED
EXTERIOR CONTAINER

Exterior Container: Box, Wooden

CFR 49 Reference Number: 178.513

UN Code: 4C1

NSN Exterior Container:

Specifications: 4C1

Net Quantity Weight: 145.5 lbs. (66 kg)

Tested Gross Weight: 145.5 lbs. (66 kg)

Dimensions Interior: 32 X 10.375 X 5.25

Manufacturer: Unknown

Year Container Manufactured: 1966

Drawing Number(s): 7549072

Cushioning: None

Closure: ¾" steel banding

INTERMEDIATE CONTAINER

Intermediate Container Description: N/A

Specification Number: N/A

Container NSN: N/A

Intermediate Container Cushioning: N/A

Intermediate Container Closure Method: N/A

Intermediate Container Dimensions: N/A

Number Of Intermediate Containers: N/A

UNIT CONTAINER

Unit Container Description: Fiber Tube

Unit Container Specification: MIL-C-2439, Drawing 7549073

Unit Container NSN: N/A

Unit Container Cushioning: N/A

Unit Container Closure Method: Tape, nylon

Unit Container Dimensions: 5.156 DIA. X 31.875 L

Number of Unit Containers: 2

SPECIAL NOTES

All exterior, intermediate, and unit containers must be inspected prior to use.

Inspect for physical damage, structural integrity and leakproofness of the containers.

SUPPLEMENTAL INFORMATION

Permitted Transportation Modes:

Military or DOD licensed truck, rail, and ship.

Military or DOD licensed aircraft.

Specific Gravity: N/A

Hydrostatic Test Pressure Applied: N/A

Leakproofness Test Applied: N/A

TEST PROCEDURES

Test Conducted	Test Method	Test Results
(1) Pre-Conditioning (fiberboard)	Part 178.602	N/A
(2) Drop Test	Part 178.603(e)(1)(ii)	Pass
(3) Leakproofness Test	Part 178.604	N/A
(4) Hydrostatic Pressure Test	Part 178.605	N/A
(5) Stacking Test (500 lbs.)	Part 178.606(c)(1)	Pass
(6) Vibration Test	Part 178.608(b)(3)	Pass

UN POP Marking

u 4C1/Y66/S/01

n USA/DOD/DEV

CERTIFICATION

Unless expressly stated to the contrary, we certify that all of the above applicable tests have been performed in strict conformance to CFR 49, Subpart M, Parts 178.600 – 178.608. Based on the successful test results shown above, this container is deemed suitable for transport of the hazardous material described herein, provided that maximum tested weights and quantities are not exceeded and the packaging is assembled as tested. The use of other packaging methods or components may make this test invalid.

PREPARED BY:


JEFFERY L. DUGAN
Test Engineer

DATE: 1 Nov 2001

SUBMITTED BY:


JERRY W. BEAVER
Chief, Validation Engineering Division

DATE: 1 Nov 2001

APPROVED BY:


WILLIAM R. FRERICHS
Associate Director for Engineering

DATE: 1 Nov 2001

PART 5 – SPECIAL PACKAGING INSTRUCTIONS

SPECIAL PACKAGING INSTRUCTION					Form Approved OMB No. 0704-0188	
1. PART OR DRAWING NO. NOMENCLATURE N/A * LIGHT BOX PROCEDURES-MIL-B-2427			2. CODE IDENT 59678		3. SPI NO. ADPLBOX001	
4. NATIONAL STOCK NO. N/A *			5. DATE OF SPI (YYMMDD) 010709		6. REVISION A	
7. QTY/UNIT OF ISSUE VARIOUS*	8. ICQ —	9. UNIT PACK WT (lb) (0.0) 145.0 MAX	10. UNIT PACK CU (CU.FT) 3.200 MAX		11. UNIT PACK SIZE (INCHES) L<45" L+W+H<70"	
			18. STEPS	19. REQD	20. DESCRIPTION	
12. MILITARY PRESERVATION MIL-STD-2073-1			1	AR	FILLER, ASTM D4727, SF OR CF, SEE NOTE F	
13. CLEANING N/A			2	AR	CUSHIONING, SEE NOTE F	
			3	1	WOOD BOX, MIL-B-2427, TY I OR II, CLASS I OR 2 SEE NOTES A AND C	
			4	AR	CLOSURE, MIL-B-2427, APPENDIX	
14. DRYING N/A						
15. PACKING MIL-STD-2073-1						
a. LEVEL A N/A						
b. LEVEL B N/A						
16. MARKING 8796522						
17. NOTES/DRAWING *THESE BLOCKS WILL VARY DEPENDING UPON ITEMS BEING PACKED.						
<p>A. THIS DOCUMENT CONTAINS INSTRUCTIONS FOR THE PREPARATION OF LIGHT BOXES WEIGHING NOT MORE THAN 145 LBS. BUT WITH A TOTAL CUBE OF 3.200 CUBIC FEET OR LESS. THIS SPI IS DESIGNED TO UTILIZE EXISTING MIL-B-2427 WOODEN BOXES IN THE INVENTORY THAT MEET THE REQUIREMENTS IN STEP 3 AND APPLIES TO ANY NSN THAT MEETS THE REQUIREMENTS OF NOTE C. CONTAINERS THAT MEET THE REQUIREMENTS OF STEP 3 BUT ARE OF A SMALLER CUBE OR SIZE THAN SPECIFIED IN BLOCKS 10 AND 11, MAY ALSO BE UTILIZED IN ACCORDANCE WITH THIS SPECIAL PACKAGING INSTRUCTION.</p> <p>B. THE LIGHT BOX MARKING REQUIREMENT OF 8796522 APPLIES TO THIS PACKAGE.</p> <p>C. REQUIREMENTS FOR USE OF THE CONTAINER IN STEP 3 FOR LIGHT PACKS:</p> <ol style="list-style-type: none"> 1. THE QUANTITY BEING PACKAGED IS LESS THAN THE FULL STANDARD PACK QUANTITY. 2. APPROVED INNER PACK CONFIGURATION (i.e. CARTONS, FIBER TUBES, METAL CONTAINERS (M2A1, M19A1 etc.)) ARE NOT CHANGED FROM THE ORIGINAL PACK, EXCEPT FOR ADDITIONAL CUSHIONING AND/OR FILLER NEEDED TO OBTAIN A TIGHT PACK. 3. AS AN ALTERNATIVE TO THE ORIGINAL EXTERIOR BOX FOR EITHER PPP-B-585, ASTM D6251/D 6251M, PPP-B-621, MIL-B-2427, MIL-B-46506 OR MIL-B-48024. 4. IF A COMPETENT AUTHORITY APPROVAL (CAA) IS REQUIRED FOR THE ITEM BEING SHIPPED, IT MUST MEET THE PACKAGING REQUIREMENTS SPECIFIED ON THE CAA. <p>D. THE PROPER SHIPPING NAME AND IDENTIFICATION NUMBER SHALL BE AS SPECIFIED BY UN NUMBER LISTED IN THE JOINT HAZARD CLASSIFICATION SYSTEM OR A CURRENT INTERIM HAZARD CLASSIFICATION FOR NSN BEING PACKED.</p> <p>E. THE POP MARKING FOR THE CONTAINER IS AS FOLLOWS:</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center; margin-right: 10px;"> <div style="width: 10px; height: 10px; background-color: black; margin: 0 auto;"></div> </div> <div> 4C1/Y66/S/(YEAR PACKED) USA/DOD/AYA </div> </div> <p>F. FILLER OR CUSHIONING MATERIAL (A-A-59135, A-A-59136, ASTM D4727, A-A-1898, PPP-C-1797) SHALL BE USED TO OBTAIN A TIGHT PACK.</p>						
WSC:		ITEM SIZE:	ITEM WEIGHT:		APPROVED: <i>Kimberly Wheat</i>	
STATEMENT A, UNLIMITED						
DD form 2169, Oct 96 Previous editions are obsolete Page 1 of 1 Pages						

PART 6 - DRAWING

The following drawings represent the Box, Wooden for Howitzer Ammunition in a Fiber Container, M105A3, Drawing No. 7549072.

DRAWING SIZE C

4

3

2

1

LIST OF PARTS			
NO	NAME OF PART	MATERIAL	DRAWING OR SPEC NUMBER
1	BOX, PACKING	WOOD	TYPE II A, CLASS 5
2			UN-B-2427 B/E
3			
4			
5	FILLER ASSEMBLY, ALL		
6	FILLER, END	A FILLER SHEET FORM	28865572 C
7	FILLER, SIDE	A FILLER SHEET FORM	UN-F-5049 D
8	FILLER, TOP	A FILLER SHEET FORM	UN-F-5048 D
9			
10	SEAL, METALLIC	1 POLYETHYLENE PLASTIC TYPE I, GR B FRESH	1
11	SHEET		58794342
12	STRAPPING	2	UN-B-2427 G
13			
14			
15			

A-AS REQUIRED
B-GRADE "W" BOXES SHALL BE USED FOR DRILL CARTRIDGES.
C-THE FILLER ASSEMBLY SHALL HAVE THE FOLLOWING DIMENSIONS:

UN "A"=14 3/4" DIA. W=13
UN "B"=14 3/4" DIA. W=13

D-NOT REQUIRED WHEN ALTERNATE FILLER ASSEMBLY IS USED.

E-MAIL BOX IN ACCORDANCE WITH FIG. 8 OF SPECIFICATION, EXCEPT THAT EACH END OF EACH SIDE SHALL BE NAILED WITH 4 NAILS UNIFORMLY SPACED.

F-STRAPPING NOT REQUIRED WHEN ALTERNATE PACKING BOX IS USED.

G-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

H-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

I-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

J-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

K-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

L-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

M-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

N-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

O-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

P-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

Q-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

R-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

S-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

T-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

U-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

V-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

W-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

X-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

Y-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

Z-ONE PLASTIC SHEET REQUIRED FOR EVERY SIX BOXES PACKED.

MARKING INSTRUCTIONS

THE BOX SHALL BE MARKED IN ACCORDANCE WITH DRAWING C8796522. (SEE NOTE 2)

THE DOT MARKING TO BE APPLIED SHALL BE AS PERTINENT-- (SEE TABLE).

THE DESCRIPTIVE NOMENCLATURE OF THE ITEM PACKED SHALL BE AS PERTINENT-- (SEE TABLE).

THE CUBICAL DISPLACEMENT SHALL BE-- "2"

THE FSN AND DODIC NUMBER SHALL BE AS PERTINENT-- (SEE TABLE).

IN ADDITION "WITH PLASTIC SHEET" SHALL BE ADDED UNDER NOMENCLATURE OR LOT NUMBER (AS SPACE ALLOWS) ON APPLICABLE BOX (SEE NOTE J)

SIZE OF LETTERS SHALL BE 7/16 MIN.

PACKING INSTRUCTIONS

PACK CONTAINERS WITH PROJECTILE ENDS REVERSED.

WHEN PACKING CARTRIDGE, SMOKE, WP, PROJECTILE END OF FIBER CONTAINER SHALL BE PLACED AT END OF BOX OPPOSITE THAT MARKED NOSE END.

PLACE PLASTIC SHEET (IN FOLDED FORM) ON TOP OF CONTAINERS. (SEE NOTE 1)

INSERT END, SIDE AND TOP FILLERS AS REQUIRED TO INSURE TIGHT PACKING.

FOR CLOSING, SEALING AND STRAPPING INSTRUCTIONS, SEE DRAWING C8796522.

WHEN ALTERNATIVE FILLER ASSEMBLY IS USED IT SHALL BE PLACED AT REAR OF BOX.

INSERT 2 CONTAINERS IN PROPER POSITION.

ADD END FILLERS AS REQUIRED FOR TIGHT PACKING.

CLOSE COVER FORCING FILLER ASSEMBLY OVER TOP OF CONTAINERS.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

REVISIONS			
ZONE	END	DESCRIPTION	DATE
		REDRAWN WITH CHANGE	900313
		AF ERR 2921244AE	
		(ECP M9A2052/890814)	
		AG MOR MOK 2021/900702	900917
		ERR 2921306H	
		AM (ECP M9A2002/890814)	900319
			PF-42

MARKING INSTRUCTIONS

THE BOX SHALL BE MARKED IN ACCORDANCE WITH DRAWING C8796522. (SEE NOTE 2)

THE DOT MARKING TO BE APPLIED SHALL BE AS PERTINENT-- (SEE TABLE).

THE DESCRIPTIVE NOMENCLATURE OF THE ITEM PACKED SHALL BE AS PERTINENT-- (SEE TABLE).

THE CUBICAL DISPLACEMENT SHALL BE-- "2"

THE FSN AND DODIC NUMBER SHALL BE AS PERTINENT-- (SEE TABLE).

IN ADDITION "WITH PLASTIC SHEET" SHALL BE ADDED UNDER NOMENCLATURE OR LOT NUMBER (AS SPACE ALLOWS) ON APPLICABLE BOX (SEE NOTE J)

SIZE OF LETTERS SHALL BE 7/16 MIN.

PACKING INSTRUCTIONS

PACK CONTAINERS WITH PROJECTILE ENDS REVERSED.

WHEN PACKING CARTRIDGE, SMOKE, WP, PROJECTILE END OF FIBER CONTAINER SHALL BE PLACED AT END OF BOX OPPOSITE THAT MARKED NOSE END.

PLACE PLASTIC SHEET (IN FOLDED FORM) ON TOP OF CONTAINERS. (SEE NOTE 1)

INSERT END, SIDE AND TOP FILLERS AS REQUIRED TO INSURE TIGHT PACKING.

FOR CLOSING, SEALING AND STRAPPING INSTRUCTIONS, SEE DRAWING C8796522.

WHEN ALTERNATIVE FILLER ASSEMBLY IS USED IT SHALL BE PLACED AT REAR OF BOX.

INSERT 2 CONTAINERS IN PROPER POSITION.

ADD END FILLERS AS REQUIRED FOR TIGHT PACKING.

CLOSE COVER FORCING FILLER ASSEMBLY OVER TOP OF CONTAINERS.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

FOR M105A3 FIBER CONTAINER, SEE DRAWING F7549073.

FOR ASSOCIATED LIST SEE 7549072.

REVISION	DATE	BY	APP. BY
1	900313	AF	PF-42
2	900917	AG	PF-42
3	900319	AM	PF-42

CURRENT DESIGN (ECP) FOR CODE 7549072
AMMUNITION, 105MM HOWITZER AMMUNITION IN FIBER CONTAINER, NEW JERSEY, 07088-5000

PART NO. 7549072

DESIGNER	DATE	BY	APP. BY
13 AUG 58	AF	PF-42	PF-42
13 AUG 58	AG	PF-42	PF-42
13 AUG 58	AM	PF-42	PF-42

DESIGNER	DATE	BY	APP. BY
13 AUG 58	AF	PF-42	PF-42
13 AUG 58	AG	PF-42	PF-42
13 AUG 58	AM	PF-42	PF-42

DESIGNER	DATE	BY	APP. BY
13 AUG 58	AF	PF-42	PF-42
13 AUG 58	AG	PF-42	PF-42
13 AUG 58	AM	PF-42	PF-42

DESIGNER	DATE	BY	APP. BY
13 AUG 58	AF	PF-42	PF-42
13 AUG 58	AG	PF-42	PF-42
13 AUG 58	AM	PF-42	PF-42

DESIGNER	DATE	BY	APP. BY
13 AUG 58	AF	PF-42	PF-42
13 AUG 58	AG	PF-42	PF-42
13 AUG 58	AM	PF-42	PF-42

DESIGNER	DATE	BY	APP. BY
13 AUG 58	AF	PF-42	PF-42
13 AUG 58	AG	PF-42	PF-42
13 AUG 58	AM	PF-42	PF-42

LINE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	1222	1223	1224	1225	1226	1227	1228	1229	1230	1231	1232	1233	1234	1235	1236	1237	1238	1239	1240	1241	1242	1243	1244	1245	1246	1247	1248	1249	1250	1251	1252	1253	1254	1255	1256	1257	1258	1259	1260	1261	1262	1263	1264	1265	1266	1267	1268	1269	1270	1271	1272	1273	1274	1275	1276	1277	1278	1279	1280	1281	1282	1283	1284	1285	1286	1287	1288	1289	1290	1291	1292	1293	1294	1295	1296	1297	1298	1299	1300	1301	1302	1303	1304	1305	1306	1307	1308	1309	1310	1311	1312	1313	1314	1315	1316	1317	1318	1319	1320	1321	1322	1323	1324	1325	1326	1327	1328	1329	1330	1331	1332	1333	1334	1335	1336	1337	1338	1339	1340	1341	1342	1343	1344	1345	1346	1347	1348	1349	1350	1351	1352	1353	1354	1355	1356	1357	1358	1359	1360	1361	1362	1363	1364	1365	1366	1367	1368	1369	1370	1371	1372	1373	1374	1375	1376	1377	1378	1379	1380	1381	1382	1383	1384	1385	1386	1387	1388	1389	1390	1391	1392	1393	1394	1395	1396	1397	1398	1399	1400	1401	1402	1403	1404	1405	1406	1407	1408	1409	1410	1411	1412	1413	1414	1415	1416	1417	1418	1419	1420	1421	1422	1423	1424	1425	1426	1427	1428	1429	1430	1431	1432	1433	1434	1435	1436	1437	1438	1439	1440	1441	1442	1443	1444	1445	1446	1447	1448	1449	1450	1451	1452	1453	1454	1455	1456	1457	1458	1459	1460	1461	1462	1463	1464	1465	1466	1467	1468	1469	1470	1471	1472	1473	1474	1475	1476	1477	1478	1479	1480	1481	1482	1483	1484	1485	1486	1487	1488	1489	1490	1491	1492	1493	1494	1495
----------	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------